

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions and listings of claims in the present application. Please amend, without prejudice, the claims in the current application as provided below in the Listing of the Claims.

LISTING OF THE CLAIMS:

Claims 1 to 9 (Cancelled).

10. (Currently Amended) A zirconium based alloy comprising:
zirconium; and
in addition to unavoidable impurities, by weight, from 0.02 to 1% iron; from 0.8 % to 2.3% niobium, less than 2000 ppm tin, less than 2000 ppm oxygen, less than 100 ppm carbon, from 5 to 35 ppm sulphur sulfur and from 0.01% to 0.25% in total of at least one of chromium and vanadium, a ratio of a niobium content less 0.5% to an iron content and at least one of not supplemented and supplemented by at least one of a chromium and a vanadium content (Nb – 0.5%)/(Fe+Cr+V) being higher than 2.5.
11. (Previously Presented) The alloy according to claim 10, wherein the oxygen is from 1000 to 1600 ppm.
12. (Previously Presented) The alloy according to claim 10, wherein the niobium is from 1 to 1.8% by weight, the iron is from 0.1 to 0.3% by weight, the tin is from 0.15 to 0.20% by weight, the at least one of chromium and vanadium is from 0.01 to 0.1% by weight, the oxygen is from 1000 to 1600 ppm, the carbon is less than 100 ppm and the sulphur sulfur is from 5 to 35 ppm.
13. (Previously Presented) A tube comprising:
a tubular arranged zirconium-based alloy wherein the alloy comprises:
zirconium; and
in addition to unavoidable impurities, by weight, from 0.02 to 1% iron; from 0.8 to 2.3% niobium, less than 2000 ppm tin, less than 2000 ppm

oxygen, less than 100 ppm carbon, from 5 to 35 ppm ~~sulphur~~ sulfur and from 0.01% to 0.25% in total of at least one of chromium and vanadium, a ratio of a ~~niobium content less 0.5% to an iron content and at least one of not supplemented and supplemented by at least one of a chromium and a vanadium content~~ (Nb-0.5%)/(Fe+Cr+V) being higher than 2.5 in a recrystallized state

14. (Currently Amended) A flat product comprising:

~~an~~ a flat arranged zirconium based alloy wherein the alloy comprises:

zirconium; and

in addition to unavoidable impurities, by weight, from 0.02 to 1% iron; from 0.8% to 2.3% niobium, less than 2000 ppm tin, less than 2000 ppm oxygen, less than 100 ppm carbon, from 5 to 35 ppm ~~sulphur~~ sulfur and from 0.01 % to 0.25% in total of at least one of chromium and vanadium, a ratio (Nb – 0.5%)/(Fe+Cr+V) being ~~of a niobium content less 0.5% to an iron content and at least one of not supplemented and supplemented by at least one of a chromium and a vanadium content~~ higher than 2.5 in a recrystallized state.

15. (Currently Amended) A method of manufacturing using a component comprising: nuclear components, comprising:

~~configuring components of a pressurized water reactor from an alloy comprising:~~

~~providing the component made of an alloy comprising:~~

zirconium; and

in addition to unavoidable impurities, by weight, from 0.02 to 1% iron; from 0.8 % to 2.3% niobium, less than 2000 ppm tin, less than 2000 ppm oxygen, less than 100 ppm carbon, from 5 to 35 ppm ~~sulphur~~ sulfur and from 0.01% to 0.25% in total of at least one of chromium and vanadium, a ratio of a ~~niobium content less 0.5% to an iron content and at least one of not supplemented and supplemented by at least one of a chromium and a vanadium content~~ (Nb – 0.5%)/(Fe+Cr+V) being higher than 2.5 in a recrystallized state, ~~wherein water initially contains less than 3.5 ppm of lithium; and~~

utilizing the component in a pressurized water reactor , wherein water initially contains less than 3.5 ppm of lithium.

16. (Previously Presented) The alloy according to claim 10, wherein the ratio is higher than 3.

17. (Previously Presented) The alloy according to claim 10, wherein the iron content does not exceed 0.35%.

18. (Currently Amended) A method for making a tube to constitute at least one of all and an external portion of at least one of nuclear fuel rod cladding and a guide tube for a nuclear fuel assembly comprising:

producing a bar from a zirconium-based alloy also containing by weight apart from unavoidable impurities, by weight, from 0.02 to 1% iron; from 0.8% to 2.3% niobium, less than 2000 ppm tin, less than 2000 ppm oxygen, less than 100 ppm carbon, from 5 to 35 ppm ~~sulphur~~ sulfur and from 0.01% to 0.25% in total of at least one of chromium and vanadium, a ratio of ~~a niobium content less 0.5% to a iron content and at least one of not supplemented and supplemented by at least one of a chromium and a vanadium content~~ (Nb – 0.5%)/(Fe+Cr+V) being higher than 2.5;

water-quenching the bar after heating at from 1000°C to 1200°C;
extruding a blank after heating at from 600°C to 800°C;
cold rolling the blank in at least two passes to obtain a tube, with intermediate thermal treatments at from 560 C to 620 C; and
carrying out a final thermal treatment at from 560 C to 620 C, all of the thermal treatments being carried out in at least one of an inert atmosphere and under vacuum.